employment, and details of some such instances of part-time day work may be indicated here.

In a town in the north of England a number of apprentices are set free from their employment at certain times so that they may attend classes which have been specially arranged for them in the local technical school in engineering and allied trades; the courses extend over two sessions of eight months each; students in their first year attend for one morning and one afternoon a week, and those in their second year for two afternoons a week, or four hours in all. The fees are paid by the employers; the apprentices pay for books and materials, but receive their wages for the periods of absence from work granted to enable them to attend the classes. The time spent by apprentices in attendance at the day classes is counted in their term of apprenticeship, and preference is given by the employers in filling vacancies in their works to those who attend the classes. The employers are represented on the governing body of the technical school.

The local education authority at a railway centre in the south of England has provided in the technical institute classes for engineering apprentices in the employment of the railway company. The apprentices are allowed to attend a four years' course, arranged in the case of the first year of instruction for 2½ hours for one morning a week, and in the case of the second and third and fourth years for 3½ hours a week, spread over two mornings. Again, at a railway centre in the north of England, the technical school carries on a course on the construction and management of the locomotive to meet the requirements of engine drivers, firemen, and engine cleaners; the instruction here is for two hours on one morning a week, and is given by teachers who are district locomotive foremen.

In a centre of chemical manufacture we find special arrangements for the instruction of trade apprentices of large engineering and chemical works. In the case of one firm the employers require that their employees shall attend an evening school until they are nineteen years of age, but some of the apprentices of this and of another firm are allowed to attend for instruction for four hours on two afternoons a week for forty weeks in the year during the last two years of their apprenticeship, without loss of wages during their absence from the works at the classes; the employers pay the fees, and attendance at these classes is regarded by them as a very important part of the apprenticeship.

In a large industrial centre the local education authority has provided apprentice day courses for engineering, plumbers' work, and painters' and decorators' work; the various courses range over two or more years, and meet for one whole day a week throughout the year. Seasonal periods of less pressure or slackness of work are peculiarly liable to occur in summer in some departments of the building trade, such as painting and plumbing, and accordingly the same authority has succeeded in establishing a suitable special summer course for plumbers who can utilise the opportunity in order to improve their knowledge and efficiency by attending on four full days and two half days weekly throughout a complete month for instruction in subjects cognate to plumbing.

Again, in the case of a closely related trade (gas-fitting), where, however, the conditions of work are somewhat different, another local authority has arranged that boys who are under training to become gas-fitters may have the advantage of concurrent technical education in the day-time. The boys attend at the local technical institute for three hours on each of three afternoons a week. The instruction they receive is in continuation and development of their previous work at the public elementary school, and includes English, workshop arithmetic, and mechanical drawing.

Among the advantages of close relations between school authorities and the employers of the students who attend the schools, not the least is the increased confidence with which school authorities can advise their pupils—especially young pupils—as to the studies they ought to take up. In the arrangements made for giving such advice there is room for great improvement; at present it is not possible to say more than that this is an essential feature in all schemes of evening-school work that succeed in securing large and continued attendance of pupils.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The following are the speeches delivered by the Public Orator, Dr. Sandys, on Tuesday, June 14, in presenting Sir Oliver Lodge, principal of the University of Birmingham, and Prof. William Henry Perkin, professor of organic chemistry in the Victoria University of Manchester, for the degree of Doctor in Science *honoris causa*:—

Adest vir scientiarum physicarum in regione quadam caelesti investiganda iam per annos triginta praeclare meritus, qui praesertim aethera illum exploravit, per quem solis stellarumque lux et calor "immemorabile per spatium" confestim, sine ullo phaenomenorum terrestrium impedimento, in orbem terrarum nostrum transmittuntur. Idem diligenter inquisivit, fulgurum vis electrica quomodo fila tectorum securitati inservientia percurrat, quamobrem subito deserat. Inde progressus, etiam vim electricam, non aliter quam lucem, undarum more moveri eo ipso tempore argumentis idoneis ostendebat, quo vir quidam insignis, Henricus Hertzius, illud ipsum experimentis comprobavit et Maxwellii nostri vaticinationes veras esse demonstravit. Iure igitur optimo Regia Scientiarum Societas numisma lucis et caloris legibus investigandis propositum huic potissimum viro donavit; iure optimo nos quoque, et haec et alia eius merita plurima admirati, eundem inter scientiarum doctores nostros honoris causa collocamus. Eum certe, qui Anglia in media, ipsius Volcani in domo dilecta Sapientiae sedem serenam nascentem fovit, crescentem adiuvit, etiam nostra Mater Alma voltu benigno respicit.

Praesentatur vobis Universitatis illius novae praeses dignissimus, rerum naturae explorator felix, eques insignis, Oliver Lodge.

Abhinc annos quattuor et quinquaginta unus e nostratibus (iuvat gloriari) primus omnium indicavit etiam e liquore piceo, qui carbonis fossilis e bitumine exsudat, colores quosdam roseos posse exoriri. Utinam etiam inventi tam pulchri repertorem illustrem purpura nostra decorare nobis contigisset! Laetamur tamen patris tam illustris in filio insigni eandem laboris patientiam, eundem scientiae, eundem veritatis amorem simplicem sincerumque agnoscere. Vir in experimentis elaborandis sollertissimus, in experimentorum interpretatione perspicacissimus, (ne plura commemorem) non modo "narcotinam" illam, quae papaveris in succ est, sed etiam rerum naturae odores quosdam suavissimos artificio suo aemulatus est. Viro tali idcirco praesertim gratulamur quod ei, propter labores eius assiduos, primum a Societate Regia Londiniensi numisma aureum donatum est; deinde Victoriana in Universitate Mancuniensi, viri huius e studiis novam gloriam adeptae, cathedra nova constituta. Laetamur denique tot colorum inventoris filium, in eadem scientiarum provincia exploratorem felicem, honoris causa purpura nostra vestitum videre.

Duco ad vos scientiae chemicae professorem Mancuniensem, nominis magni heredem magnum, Willelmum Henricum Perkin.

LEEDS.—At a meeting of the council of the University held on June 15, the following resolution was passed:—"The council record their deep sense of the honour done to the University by the offer of a fund raised as a memorial to the late Sir George Livesey for the endowment of a professorship of applied chemistry relating to the coal-gas and fuel industries. The council gratefully accept the offer, and hereby establish a Livesey professorship of coal-gas and fuel industries, subject to the conditions prescribed in the deed of gift submitted on behalf of the donors or the Livesey Memorial Fund." The fund referred to amounts to about 11,000*l*., and has been collected from corporations, companies, and private donors associated with the industries with which Sir George Livesey was so honourably connected.

LONDON.—At a meeting held on June 15 the Senate re-elected Dr. M. J. M. Hill, F.R.S., Astor professor of mathematics, to be Vice-Chancellor of the University for a second term of office, viz. until June, 1911.

OXFORD.—The electrical laboratory presented to the University by the Drapers' Company, and erected on the north side of the University Museum at a cost of 23,000*l*.,

was opened in the presence of a large company on June 21. The Master of the Drapers' Company, Mr. K. R. Fletcher (upon whom the degree of Doctor of Civil Law *honoris causa* was conferred), made the presentation of the laboratory, and the Chancellor (Lord Curzon) acknowledged the gift in a speech, in the course of which he said that eight years ago, when a statement was drawn up of the needs of the University, a very prominent place was given in it to the need for a laboratory for the Wykeham professor of physics, and only three years ago, when the Vice-Chancellor and he wrote their first letter to the Press on behalf of the appeal for the re-endowment of the University, they summed up the requirements of the University in this respect in the laconic phrase, 'We need an electrical laboratory.' Oxford needed it, not merely to enable the professor to give the best teaching to candidates for honour degrees, but also to enable him to keep in touch with the most modern scientific discovery by the pursuit of independent research with the aid of the most recent appliances, and also, of course, to provide opportunities for similar investigations to outside people. He would not, however, like anyone to go away with the idea that, even after this splendid gift, the scientific requirements of the University were exhausted. The department of chemistry, both in respect of teachers and of laboratories, was quite unfit for the great institution to which it belonged. He was sure, also, that in the department of engineering science a laboratory was badly wanted.

COLUMBIA UNIVERSITY has conferred its doctorate of science on Sir William White, K.C.B., F.R.S.

IT is announced in *Science* that Bryn Mawr College has obtained money sufficient to pay its debts, and in addition 50,000*l*., which entitles it to the appropriation of 50,000*l*. of the General Education Board. The sum raised by the Alumnæ Association was 60,800*l*., which is to be used for the endowment of chairs in mathematics, English, and economics.

THE Imperial University Congress, which will be held in London in 1912, is likely to be one of great importance and of far-reaching influence. All the universities of the Empire are to be invited to send representatives to the congress, and the invitations are being issued in the names of the Universities of London, Oxford, and Cambridge, while the University of London will have the duty of organising the congress. It has been suggested that a preliminary meeting of representatives of British universities might be held next year with the view of preparing materials for the congress. Dr. R. D. Roberts, formerly Fellow of Clare College, Cambridge, and one of the registrars of the University of London, will act as secretary of the congress.

As announced already, the third International Congress on School Hygiene is to be held in Paris on August 2–7 next. The organising committee of Great Britain and Ireland, of which Sir Lauder Brunton, Bart., F.R.S., is president, is appealing specially to all who were associated with the London congress in 1907 to attend the Paris meeting. Travelling and hotel accommodation are being arranged by the committee at moderate charges, and full particulars concerning them can be obtained from Mr. Durrie Mulford, assistant secretary, 90 Buckingham Palace Road, S.W. The general meetings of the congress will deal with uniformity of method for physical examinations in schools, sexual education, and the training and appointment of the school doctor. The other business of the congress will be done in eleven sections, dealing with every aspect of the question of securing the health of the teachers and pupils in schools.

THE Johns Hopkins University Register, 1909–10, which has reached us from Baltimore, contains an interesting historical statement. From this we find that the original endowment of the University amounted to a little more than 600,000*l*. This sum has been supplemented by several gifts, including the endowment fund of 1902, amounting to 200,000*l*., and the John W. McCoy fund of 100,000*l*. The income-bearing funds have a "book value" of 916,000*l*. The real estate and buildings, books, scientific apparatus, and general equipment are valued at 380,000*l*. The total value of the assets of the University is thus about 1,300,000*l*. In June, 1909, the General Education Board offered to contribute 50,000*l*. towards the endowment of the University provided the institution is able to secure 150,000*l*. on or before December 31 next. It is expected that the conditions of the gift will be met by the date specified. The Legislature of Maryland recently made an appropriation of 5000*l*. a year for 1911 and 1912.

WE have received a copy of a syllabus for the "teaching of science of home affairs," drawn up by a committee of the Association of Teachers of Domestic Science, in conjunction with certain teachers of chemistry and hygiene. The object of the syllabus is to indicate a course of instruction up to a "matriculation" or "school-leaving" standard suitable for girls in a secondary school. The course is designed to include those portions of elementary physics, chemistry, hygiene, and physiology necessary for the proper understanding of the scientific principles underlying home management. It is hoped that courses, somewhat on the lines of those suggested in the syllabus, will in the future be generally adopted in girls' secondary schools, thereby bringing about a much needed correlation of the science teaching with the instruction in cookery work, laundry work, &c. The committee suggests the desirability of the inclusion of this modified science course as one of the optional subjects for girls in the scheme of examinations held by the authorities now conducting public examinations of a "matriculation" or "school-leaving" standard.

THE Royal Commission on University Education in London has issued its first report, which consists of the minutes of evidence taken up to April, 1910. It will be remembered that the commissioners were appointed to inquire into the working of the present organisation of the University of London, and into other facilities for advanced education (general, professional, and technical) existing in London for persons of either sex above secondary-school age; to consider what provision should exist in the metropolis for university teaching and research; to make recommendations as to the relations which should in consequence subsist between the University of London, the incorporated colleges, the Imperial College of Science and Technology, the other schools of the University, and the various public institutions and bodies concerned; and, further, to recommend as to any changes of constitution and organisation which appear desirable, regard being had to the facilities for education and research which the metropolis should afford for specialists and advanced students in connection with the provision existing in other parts of the United Kingdom and of our dominions beyond the seas. In a letter to the *Times* of June 17, Prof. M. J. M. Hill, Vice-Chancellor of the University of London, points out that, in addition to the evidence already published, further evidence from persons representing other views held in the University will be submitted to the Royal Commission, and suggests that it would be well to suspend judgment and to abstain from drawing conclusions from the evidence now available until the whole inquiry has been completed and the commission has issued its final report.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, June 16.—Sir Archibald Geikie, K.C.B., president, in the chair.—D. **Thoday**: Experimental researches on vegetable assimilation and respiration. VI.—Some experiments on assimilation in the open air. In these experiments Sachs's half-leaf dry-weight method has been employed, with modifications suggested in a previous paper for avoiding errors due to shrinkage of the insolated half-leaves. Turgid leaves of *Helianthus annuus* were found in bright sunlight to increase in dry weight 17 mg. per hour per sq. decim.; thus Sachs's high value is confirmed. Even a slight loss of turgor, however, was accompanied by a diminution in the rate of increase. For this high rate of assimilation a leaf-temperature of 23° C. to 24° C. is probably required. It is suggested that Brown and Escombe's low results in bright diffuse light indicate that the stomata of Helianthus leaves open to their full extent only in light which is similar in quality to sunlight and approaches it in intensity. Detached leaves of